

**U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM**

SCIENTIFIC NAME: *Cicurina wartoni*

COMMON NAME: Warton's cave meshweaver

LEAD REGION: Region 2

INFORMATION CURRENT AS OF: April 2010

STATUS/ACTION

☐ Species assessment - determined we do not have sufficient information on file to support a proposal to list the species and, therefore, it was not elevated to Candidate status

☐ New candidate

☒ Continuing candidate

☐ Non-petitioned

☒ Petitioned - Date petition received: May 11, 2004

☐ 90-day positive - FR date:

☐ 12-month warranted but precluded - FR date:

☐ Did the petition request a reclassification of a listed species?

FOR PETITIONED CANDIDATE SPECIES:

a. Is listing warranted (if yes, see summary of threats below)? Yes.

b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? Yes.

c. If the answer to a. and b. is "yes", provide an explanation of why the action is precluded.

Higher priority listing actions, including court-approved settlements, court-ordered statutory deadlines for petition findings and listing determinations, emergency listing determinations, and responses to litigation, continue to preclude the proposed and final listing rules for this species. The "Progress on Revising the Lists" section of the current CNOR (<http://endangered.fws.gov/>) provides information on listing actions taken during the last 12 months.

☐ Listing priority change

Former LP: ☐

New LP: ☐

Date when the species first became a Candidate (as currently defined): Nov. 15, 1994

☐ Candidate removal: Former LPN: ☐

☐ A – Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

☐ U – Taxon not subject to the degree of threats sufficient to warrant issuance of a

proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.

- ☐ F – Range is no longer a U.S. territory.
- ☐ I – Insufficient information exists on biological vulnerability and threats to support listing.
- ☐ M – Taxon mistakenly included in past notice of review.
- ☐ N – Taxon does not meet the Act’s definition of “species.”
- ☐ X – Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Arachnid, Dictynidae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Texas

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Travis County, Texas

LAND OWNERSHIP: The cave is currently privately owned by Canyon Creek Home Owners Association. Some of the adjacent property is owned by the City of Austin (City), Balcones Canyonlands Preserve.

LEAD REGION CONTACT: Sarah Quamme, 505-248-6419, Sarah_Quamme@fws.gov

LEAD FIELD OFFICE CONTACT: Austin Ecological Services Field Office, Cyndee Watson, 512-490-0057, ext. 223, Cyndee_Watson@fws.gov

BIOLOGICAL INFORMATION

Species Description: This meshweaver (spider) is eyeless, unpigmented, known only from a female specimen, and is 0.23 inch (in.) (6 millimeters (mm)) long (Gertsch, 1992, p. 101).

Taxonomy: This meshweaver is a member of the family Dictynidae and a member of the subgenus *Cicurella*. It was first collected in 1990 by James Reddell, Marcelino Reyes, and Lee Sherrod and described by Gertsch (1992, p. 101). *Cicurina* (meshweavers) are mostly small forms derived from surface dwelling ancestors with eight-eyes (typically) and are progressively losing or have lost their eyes (Gertsch 1992, pp. 75-76, 79, 97). Paquin and Hedin (2004, pp. 3239-3240) conducted genetic studies on three other species of cave dwelling blind meshweavers occurring in southern Travis and northern Hays counties, Texas, to develop genetic assessment techniques for species-level identification of immature specimens of blind *Cicurina* spiders or meshweaver (we also rely on morphological verification). Unfortunately, owners of the only known cave for the Warton’s cave meshweaver did not grant access to the researchers, and the species could not be included in the study. The best available scientific information on the taxonomy of this species is from Gertsch (1992) and Paquin and Dup  rr   (2009, p. 55), and based on that information we continue to consider the meshweaver to be a valid taxon.

Habitat/Life History: This sedentary meshweaver spins a small web in and under detritus and small rocks (Gertsch 1992, p. 76). *Cicurina* spp. prey on immature millipedes (*Speodesmus*

spp.) (Reddell 1994, p. 39). This eyeless, troglobitic (limited to underground habitat) meshweaver only inhabits caves or other geological features in rocks known as karst on the Edwards Plateau. Karst refers to a type of terrain that is formed by the slow dissolution of calcium carbonate from limestone by mildly acidic groundwater (Veni and Associates 1988, p. A-2), which creates cave openings, cracks, fissures, fractures, and sinkholes, and a honey-combed bedrock that are all part of the karst system.

Cave crickets (*Ceuthophilus* spp.), which are found in most central Texas caves (Reddell 1965, p. 144), are a critical source of nutrient input for troglobites (Barr 1968, pp. 51-53; Reddell 1993, p. 2). They are an important part of the karst ecosystem and food web that meshweavers rely on. Cave crickets forage on the surface at night and roost in the cave during the day. They are opportunistic scavengers or omnivores (Elliott 1994, p. 16; Taylor *et al.* 2005, p. 98). They deposit their eggs and guano in the cave, providing nutrients for a variety of karst species (Mitchell 1971, pp. 250, 257, 259; Barr 1968, pp. 51-53; Culver 1986, p. 433; Poulson *et al.* 1995, p. 226) that comprise the food web that meshweavers depend on.

Taylor *et al.* (2005, pp. 102, 105, 109) found that one species of cave cricket (*Ceuthophilus secretus*) foraged up to 345 feet (ft) (105 meter (m)) from the cave entrance. Cave crickets may use small, unnoticeable passages from the cave to the surface in addition to the main cave entrance to enter and exit the cave demonstrating that it is important to protect not only the cave opening but the entire cave footprint. Cave crickets and their foraging ranges surrounding the underground extent of a cave are important to the conservation of karst invertebrates, which includes Warton's meshweaver.

Surface vegetation is important to karst ecosystems and the Warton's meshweaver because nearly all food energy in caves must be imported from above ground either by organic material washed in, deposited through root masses, or brought in by animals (e.g., cave crickets) through guano, eggs, and carcasses. Tree roots have been found to provide a major energy source in limestone caves in Hawaii (Howarth 1981, p. 318). Jackson *et al.* (1999, p. 11387) investigated rooting depth in 21 caves on the Edwards Plateau to assess the below-ground vegetational community structure and the functional importance of roots. They observed roots of six tree species common to the plateau penetrating to below 16 ft (5 m) (Jackson *et al.* 1999, p. 11390). Also, since the diet of cave crickets includes plants, insects, carrion, and fruit they require a healthy vegetation community to provide these items (Elliott 1994, p. 16, Taylor *et al.* 2005, p. 98, Taylor *et al.* 2007, p. 42).

In some cases, healthy native plant communities may also help control certain non-native species (e.g., red-imported fire ants (*Solenopsis invicta*)) (Porter *et al.* 1988, p. 916) that may compete with or prey upon species including cave crickets (Elliott 1994, p. 17) that are important nutrient contributors (Helf 2005, p. 5).

Historical Range/Distribution: A small, shallow cave (Pickle Pit) in northern Travis County, Texas, is the only known location of this species. The cave is about 13 ft (4 m) deep with a total length of about 30 ft (9 m). It consists of one room of about 10 ft (3 m) by 17 ft (5 m) and two low extensions of about 12 ft (4 m) and 17 ft (5 m). Ceiling heights range from 1 to 5 ft (0.3 to 2 m) (Elliott and Reddell 1989, p. 34).

Population Estimates/Status: There are no population estimates for the species. Population estimates are extremely difficult to obtain for this and other karst invertebrates occupying similar habitats due to small sample size, their cryptic behavior, and their use of spaces inaccessible to humans.

THREATS

We have no new information as of April 2010 regarding threats to the species.

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

The Warton's cave meshweaver is threatened by water pollution. Soil depth is shallow over the limestone plateau, so water collects as sheet flow on the surface following rain and enters the subsurface environment through cave openings, fractures, and solutionally-enlarged bedding planes (that divides two bedrock layers). This direct, rapid transport of water through the karst allows for little or no purification (Veni and Associates 1988, p. 7-1), and contaminants and sediments enter directly into the subsurface environment. As a result, the karst environment and karst invertebrates are vulnerable to the adverse effects of pollution from contaminated ground and surface water. Primary routes of contaminant entry into karst ecosystems include the introduction of water-borne pollutants into the surface and subsurface drainage basin of a cave. These drainage basins (for individual caves) are typically small in the area where the Warton's cave meshweaver occurs. The Service conducted an assessment of subsurface drainage basin sizes for caves that are known to contain endangered karst invertebrates and found that most subsurface drainage basins have a 500 ft (152 m) radius. Surface drainage basins in this area and across the Edwards Plateau are usually smaller than subsurface drainage basins. These drainage basins supply water to the cave and karst ecosystem; therefore, they have the greatest potential to carry contaminants into the karst. Although the surface drainage area for Pickle Pit is small and undeveloped, there is potential for contamination of the subsurface drainage of the cave from runoff from roads and residences that enter the karst at elevations above the lowest elevation of Pickle Pit. These roads and residences occur to the north, east, and southwest of Pickle Pit at a distance of 770 ft (235 m), 793 ft (242 m), and 490 ft (149 m) respectively.

The species and its habitat are subject to possible habitat degradation from the Canyon Creek subdivision near Pickle Pit. Site plans for development of the property were approved by the City in 1987. The Service issued a biological opinion on this project to the U.S. Army Corps of Engineers (Corps) on December 30, 1994, which covered the effects to two endangered birds (golden-cheeked warbler (*Dendroica chrysoparia*) and black capped vireo (*Vireo atricapilla*)) and to five endangered karst invertebrates (Tooth Cave ground beetle (*Rhadine persephone*), Kretschmarr Cave mold beetle (*Texamaurops reddelli*), Bone Cave harvestman (*Texella reyesi*), Tooth Cave pseudoscorpion (*Tartarocreagris texana*), and the Tooth Cave spider (*Neoleptoneta myopica*)). These five karst invertebrates are found in other karst features in the area, but are not in Pickle Pit or the preserve that surrounds it. This preserve was established as part of the mitigation for the Canyon Creek subdivision. The project description was modified from the 1987 plan so that development is set back 250-500 ft (76-152 m) from the northern side of Pickle Pit and the area to the south will remain undeveloped. The development closest to Pickle Pit has since been completed, and the cave is now surrounded by residential development and a

residential road on all but the south side. While this configuration provides some protection for Pickle Pit, it may not fully protect the cave cricket foraging area (see discussion in the “Habitat/Life History” section) or protect all of the surface and subsurface drainage (based on the lowest elevation in Pickle Pit). However, the subsurface drainage area has not been specifically delineated.

The Canyon Creek subdivision may have some adverse effects on the cave ecosystem from pesticide use and contaminated surface runoff into the area used by cave crickets (345 ft (105 m) outside the surface drainage basin for Pickle Pit)) and by contaminated runoff entering the subsurface drainage area of the cave. Although the effects of specific contaminants on karst biota are unknown, the ongoing application of pesticides and fertilizers to lawns is a constant source of pollutants (Menzer and Nelson 1980, pp. 663, 637-652). Petroleum products are also inherent components of urban environments from automobile operation and maintenance (Van Metre *et al.* 2000, p. 4069). During rain events, these chemical pollutants, which accumulate in soils and on impervious surfaces (such as roofs, parking lots, and roads) during dry periods, are transported downstream by water. A number of toxic materials are used on residential yards and are in road runoff (including potential accidents and spills of oil, gasoline, or other toxic substances) and are threats. The cave has been gated to prevent unauthorized access and deter vandalism and trash dumping, while allowing continued air flow and nutrient input. However, the cave gate was installed slightly above the elevation of the cave entrance and may alter the natural flow of surface water, nutrients, and air into the cave. In addition, the gate has been rusted shut for some time, and it will have to be replaced before ingress and egress for monitoring can be accomplished. Recommended management (including red-imported fire ant control and complete fencing) necessary to adequately protect this cave and karst area have not been accomplished. As part of the reasonable and prudent measures of the BO that covered the effects of the development on endangered songbirds, the overall preserve (that contains Pickle Pit) was to be completely fenced to prohibit human entry and maintained in perpetuity. Part of the perimeter of this preserve is the back edge of private lots, many of which have gates installed by landowners. The rest of the preserve perimeter is also not adequately fenced (including one main road, Boulder Lane) to prohibit entry into the preserve. In addition, there is no fencing around the cave itself. Fencing is important to prevent vandalism of the cave gate, unauthorized dumping (including toxic substances), and other activities that could alter vegetation and the karst ecosystem. Uncontrolled access increases the potential for these activities. We have no current information about effects on the area surrounding the cave, conditions within Pickle Pit, or the meshweaver.

Caves in the Austin area are subject to vandalism and illegal dumping (Mark Sanders, City of Austin, pers. comm., 2007). Household garbage, construction debris, motor oil, and other materials may be dumped directly into cave entrances. In addition, unauthorized cave entrance could result in destruction of cave features by spraying graffiti or scraping or removing cave surfaces or individual rock features. Destruction of cave features and/or spraying graffiti on walls of the feature could lead to direct destruction of habitat used by the meshweaver or by other karst species on which it depends.

Vandalism of caves may result in mortality of meshweavers by trampling and indirect impacts via habitat destruction (Veni 1988, pp. 7-3). Due to the honeycomb nature of the karst, it is

unlikely that humans could extirpate the entire population in one incident of vandalism; however, extreme cases could cause this to happen (e.g., petroleum spill). It is more likely that, multiple destructive incidents over time would degrade the habitat to the point that the site is no longer suitable due to compacting soil and altering temperature (Reddell 1993, p. 7). Also, karst invertebrates are usually found in low numbers, so mortality from trampling could have a significant impact on the population.

We conclude that the Warton's cave meshweaver is threatened by the present and threatened destruction, modification, or curtailment of its habitat and range.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

Overutilization is not known to be a factor threatening this meshweaver.

C. Disease or predation.

Red-imported fire ants are voracious predators, and there is evidence that arthropod diversity drops in their presence (Vinson and Sorensen 1986, pp. 4, 11-12, 17); Porter and Savignano 1990, p. 2101). Elliott (1992, p. 1) noted that red-imported fire ant activity has increased dramatically in Central Texas since 1988. In addition to preying on cave invertebrate species, including cave crickets, red-imported fire ants compete with cave crickets for food (Elliott 1994, p. 17; Helf 2002, p. 1). Helf (2002, p. 1) states that competition for food between red-imported fire ants and cave crickets may be a more important interaction than predation. The presence of red-imported fire ants in and around karst areas could have a drastic detrimental effect on the karst ecosystem through loss of, or impacts to, both surface and subsurface species that are critical links in the food chain. Morrison (2002, p. 2342) found red-imported fire ants have their worst effect immediately after invasion, and over many years their effect declines. In areas where red-imported fire ants are established in karst areas of central Texas, the same environmental factors that impact overall species diversity probably also impact red-imported fire ant density (Morrison and Porter 2003, p.548). However, these papers do not demonstrate that red-imported fire ants are no longer a threat to this species. Moreover, species with an extremely limited range (such as this species) are more vulnerable to threats such as red-imported fire ants and stochasticity. Red-imported fire ants occur on the tract where the cave is located and pose a significant threat to karst invertebrates (including this meshweaver), as discussed above. On a site visit in the summer of 1993 to Pickle Pit, where this species occurs, Service employees, consultants to the landowner, and Corps personnel found an active red-imported fire ants mound 30 ft (9 m) east of the cave entrance. On a site visit in 2004, a City employee found human trail use and dumping of construction and other materials close to the cave, types of disturbances conducive to increasing infestation by red-imported fire ants (Mark Sanders, pers. comm., 2007). Since we do not have access to the cave or to the area surrounding it, we do not know if the status of red-imported fire ants in the vicinity of the area has changed since 2004. Based on our evaluation, we conclude that there is sufficient information to develop a proposed listing rule for this species due to the present and threatened predation (and competition) on this species and other species that are important to the nutrient input of this cave and associated karst.

D. The inadequacy of existing regulatory mechanisms.

Currently, no State laws protect this meshweaver or directly address protection of its habitat.

Terrestrial invertebrates are not included on Texas Parks and Wildlife Department (TPWD) list of threatened and endangered species. In addition, TPWD regulations do not contain provisions for protecting habitat of any State listed species. Cave protection laws of the City only provide for a 100 ft (30 m) buffer zone around “critical environmental features” (including caves) and Texas Commission on Environmental Quality (TCEQ) rules generally affect only significant recharge features. The cave containing this species does not receive significant recharge (Mike Warton, PBS&J Consultants, pers. comm., 1993) and would not likely qualify for protection under TCEQ regulations. Based on our evaluation, we conclude that there are not sufficient existing regulatory mechanisms in place to remove threats to the species.

E. Other natural or manmade factors affecting its continued existence.

Due to inherently low sample sizes, it is difficult to detect possible impacts affecting karst invertebrates because population responses (positive or negative) may not be immediate or detectable. We are assuming that this species has a small population size since it is not known to occur outside of Pickle Pit. Stochastic events from either environmental factors (random events e.g. severe weather which does occur in central Texas) or demographic factors (random causes of births and deaths of individuals) are threats to the species because it occurs in only one location (Melbourne and Hastings 2008, p. 100), and it relies on stable conditions. Some pressures impacting karst invertebrates occur over long time-spans and are difficult to measure because species often retreat into humanly inaccessible cracks connected to caves (mesocaverns) and are not observed during surveys (Krejca and Weckerly 2007, p. 3). In addition, this cave has not been surveyed enough to determine if arthropod diversity has changed. The last survey of Pickle Pit was on June 12, 2001 (Jean Krejca, Zara Consultants, pers. comm., 2007).

In addition to competition from red-imported fire ants (see discussion under Factor C); surface-dwelling competitors such as cockroaches (*Periplaneta americana*) and sow bugs (*Armadillidium* spp.) can be introduced into karst ecosystems in association with residential and commercial activity. Native and nonnative species may compete with karst invertebrates directly by consuming the same foods and using the same habitats, or they may compete indirectly by using resources needed by species such as cave crickets that provide nutrient input to karst ecosystems.

According to the Intergovernmental Panel on Climate Change (IPCC) (2007, p. 1) “Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.” Average Northern Hemisphere temperatures during the second half of the 20th century were very likely higher than during any other 50-year period in the last 500 years and likely the highest in at least the past 1,300 years (IPCC 2007, p. 1). It is very likely that over the past 50 years: cold days, cold nights and frosts have become less frequent over most land areas, and hot days and hot nights have become more frequent (IPCC 2007, p. 1). It is likely that: heat waves have become more frequent over most land areas, and the frequency of heavy precipitation events has increased over most areas (IPCC 2007, p. 1).

The IPCC (2007, p. 6) predicts that changes in the global climate system during the 21st century are very likely to be larger than those observed during the 20th century. For the next two decades a warming of about 0.2°C (0.4°F) per decade is projected (IPCC 2007, p. 6).

Afterwards, temperature projections increasingly depend on specific emission scenarios (IPCC 2007, p. 6). Various emissions scenarios suggest that by the end of the 21st century, average global temperatures are expected to increase 0.6°C to 4.0°C (1.1°F to 7.2°F) with the greatest warming expected over land (IPCC 2007, pp. 6-8). Localized projections suggest the southwest may experience the greatest temperature increase of any area in the lower 48 States (IPCC 2007, p. 8). The IPCC says it is very likely hot extremes, heat waves, and heavy precipitation will increase in frequency (IPCC 2007, p. 8). There is also high confidence that many semi-arid areas like the western United States will suffer a decrease in water resources due to climate change (IPCC 2007, p. 8). Milly *et al.* (2005) project a 10–30 percent decrease in precipitation in mid-latitude western North America by the year 2050 based on an ensemble of 12 climate models.

Considering, that the Warton's cave meshweaver is dependent on stable temperatures and humidity and that in-cave temperatures are the average annual surface temperature, this indicates that this species may be affected by climate change. Changes in vegetation and the surface environment may also indirectly affect the meshweaver by reducing food resource amounts and availability. Rainfall regime changes and increased severe weather events may also impact cave environments by filling them with debris, flooding, drying them out, and altering the amount of nutrients washed into a cave. Caves in arid regions have lower apparent invertebrate populations and diversity, due to less moisture and nutrient availability. Since the meshweaver is also sensitive to these habitat parameters, it is reasonable that climate change could affect this species as well.

We conclude that the Warton's cave meshweaver is threatened by its small population size and extremely limited range which makes it more vulnerable to existing threats, competition with surface dwelling invertebrates associated with human development, and by climate change.

CONSERVATION MEASURES PLANNED OR IMPLEMENTED: Landowners agreed to preserve Pickle Pit and the adjacent area as part of a biological opinion issued to the U.S. Army Corps of Engineers (Corps) on December 30, 1994, that covered two endangered songbirds and five endangered karst invertebrates. This agreement included fencing to restrict public access. This fencing would benefit the meshweaver by more effectively deterring human access to the area around Pickle Pit and associated activities (e.g., littering or picnicking) that might adversely affect the meshweaver. This task has still not been accomplished, and threats from public access are ongoing. This meshweaver is a high priority species in the Wildlife Action Plan of Texas (TPWD 2005, p. 76).

SUMMARY OF THREATS: The meshweaver is threatened because it occurs in a single cave and associated karst surrounded by an urban environment. Threats include 1) pollution from runoff including pesticide use in nearby homes and from roads; 2) unauthorized entry into the area surrounding the cave (but not the cave itself because it is gated) and associated karst; 3) modification of vegetation near the cave from human use; 4) trash dumping that may include toxic materials near the feature that may be associated with vandalism; 5) predation and competition from red-imported fire ants; 6) competition from surface invertebrates invading the cave (associated with increased human activity); and 7) vulnerability due to being in a single location with a small population size which makes it more vulnerable to other threats. We find

that the Warton's meshweaver is warranted for listing throughout all of its range, and, therefore, find that it is unnecessary to analyze whether it is threatened or endangered in a significant portion of its range.

For species that are being removed from candidate status:

____ Is the removal based in whole or in part on one or more individual conservation efforts that you determined met the standards in the Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE)?

RECOMMENDED CONSERVATION MEASURES: The preserve area around Pickle Pit should be fenced to discourage entry to the immediate vicinity of the cave. The backs of lots surrounding the area of the cave should be fenced in a manner that discourages unauthorized access, and fencing along areas of roads where the public could potentially access the area surrounding the cave should be improved. In addition, the elevation of the cave gate should be examined and modified if it is impeding recharge to Pickle Pit. An appropriate control program for red-imported fire ants should be implemented within the cave cricket foraging area. The rusted cave gate lock should be removed and replaced, and periodic monitoring of the cave should be conducted to verify that suitable habitat is maintained and to monitor the status of the meshweaver. A specimen of the meshweaver should be collected and curated in 100 percent ethanol and analyzed for genetics and taxonomy (including morphological examination). In February 2010, the Southwest Range and Wildlife Foundation (Foundation) was granted a conservation easement on the property. Currently, Service personnel are communicating with the Foundation and the landowner (Canyon Creek Home Owners Association) to gain access to the cave to collect a specimen and to discuss monitoring and management. The subsurface drainage basin of Pickle Pit should be determined to ascertain if it is included entirely in the undeveloped area surrounding Pickle Pit. If it is not, outreach should be conducted with neighbors in the drainage basin to encourage them to use environmentally friendly lawn maintenance practices (e.g., avoiding the use of pesticides and other chemicals) to minimize impacts to the karst ecosystem.

LISTING PRIORITY

THREAT			
Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2*
	Non-imminent	Subspecies/population	3
		Monotypic genus	4
		Species	5
Moderate to Low	Imminent	Subspecies/population	6
		Monotypic genus	7
		Species	8
	Non-imminent	Subspecies/population	9
		Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:

Magnitude: Because of the single location, threats to the species from red-imported fire ants, potential for pollution from nearby activities including pesticide use in nearby homes and runoff from Boulder Lane and other roads, unauthorized entry into the area surrounding the cave, modification of vegetation near the cave from human use, and trash dumping that may include toxic materials near the feature, we consider the threat magnitude to be high. The small size of the feature and single known location that the meshweaver inhabits render it highly vulnerable to the threats described above.

Imminence: Red-imported fire ants are known to occur in the vicinity of the cave and impacts to the cave from runoff and human activities are ongoing and imminent.

Rationale for Change in Listing Priority Number (insert if appropriate)

____ Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed? Yes.

Is Emergency Listing Warranted? No. Due to the current status of the species and its habitat, emergency listing of the Warton's cave meshweaver is not warranted at this time. The cave has been gated to prevent human access, while allowing continued air flow and nutrient input. No new threats to the species are anticipated. Therefore, emergency listing is not likely to provide immediate protection that would either alleviate threats or prevent extinction before a normal listing action occurs.

DESCRIPTION OF MONITORING: No routine monitoring program for the species is currently in place. The last verification of the species occurring in the cave was made in 2001 (Jean Krejca, pers. comm., 2007). No estimates of abundance were made at that time. Access to the site for monitoring has not been available for several years because the landowner has not granted permission to enter the cave and the cave gate is rusted shut. However, as mentioned in the Recommended Conservation Measures section above, we are continuing to communicate with the landowner to gain access.

COORDINATION WITH STATES

Indicate which State(s) (within the range of the species) provided information or comments on the species or latest species assessment: Texas. On March 4, 2010, the Service contacted TPWD by email requesting information on the status of this and other candidate species. They provided no new information in their March 30, 2010, email response (Wendy Gordon, TPWD, pers. comm., 2010)

Indicate which State(s) did not provide any information or comments: None.

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APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions or removal of species from candidate status, and listing priority changes.

Approve:  May 21, 2010
Acting Regional Director, Fish and Wildlife Service Date

Concur: 
ACTING :
Director, Fish and Wildlife Service Date: October 22, 2010

Do not concur: _____
Director, Fish and Wildlife Service Date

Director's Remarks:

Date of annual review: April 2010
Conducted by: Cyndee Watson